

**REMARKS**

Claims 1-6 and 8-13 are pending in the application. Claim 1 has been amended to clarify that the sonic signal is propagated only along a short section of tubing between the first and second locations.

The claims were rejected under 35 U.S.C. § 103(a) as unpatentable over Montgomery '908 or Bockhorst in combination with Grossman and Close or Arriens. Applicant submits that the invention would not have been obvious over the references, and that the examiner has not provided any showing that one of *ordinary* skill in the art would be led to combine the references as the examiner has done.

The Manual of Patent Examining Procedure provides examiners with guidelines for determining when claims may be obvious. MPEP § 706.02(j). To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. Second, there must be a reasonable expectation of success in making the combination. Finally, the prior art references must teach or suggest *all* the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found *in the prior art* and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention *or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.*" *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). [emphasis added]

It is respectfully submitted that the examiner's reasoning in maintaining the rejection of claim 1 as being obvious in view of Montgomery ('908) or Bockhorst et al when taken with Grossman and Close et al or Arriens is not convincing.

The examiner has not shown how any teaching, suggestion, or motivation to make the combination on which the rejection is based can be found in the references or in the general knowledge of the person of *ordinary* skill in the art. There is no reason for a person of *ordinary* skill to even consider Montgomery or Bockhorst et al. If, in fact, the teachings of those references are capable of being implemented as described (and as maintained by the examiner), then the person of *ordinary* skill would have no motivation for “converting said sonic signal into a second electric signal at said second location and storing said second electric signal for subsequent retrieval” because the sonic signal could be transmitted, according to Montgomery or Bockhorst et al, to any desired location uphole of the obstruction. Alternatively, if (as maintained by the Applicant) long range acoustic signal transmission as taught by Montgomery or Bockhorst et al is not capable of practical implementation, even after decades of research in this field, there is nothing in the prior art that would motivate one of *ordinary* skill to use acoustic signal transmission over a short distance to by-pass a valve or the like obstructing electrical signal transmission.

Neither the prior art of record nor the general knowledge of the person of *ordinary* skill suggests the desirability of the claimed invention. The mere fact that references *can* be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. The mere fact that the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references.

As previously argued, Montgomery and Bockhorst et al disclose methods and apparatus which purport to be capable of acoustically transmitting signals over arbitrarily long lengths of drill string. The natural use for such methods and apparatus would be to transmit data from a downhole location directly to the surface. Such transmission would bypass an obstruction in the internal bore of the drill string, and would not require the acoustic signal to be converted into an electric signal at a location closely adjacent the surface side of the obstruction and stored for subsequent retrieval, as required by present claim 1. That is, taking the teaching of Montgomery or Bockhorst et al as a starting point, the person of *ordinary* skill would have no motivation, in the light of the prior art of record, to modify the methods or apparatus as taught by these

references in order to arrive at the invention as defined in present claim 1. If the methods and apparatus as taught by Montgomery or Bockhorst were capable of practical implementation in the manner taught therein, then they would provide a complete solution to the problem addressed by the present invention. Accordingly, there would be no reason for the person of *ordinary* skill to modify such methods and apparatus in the manner required by present claim 1. If the skilled person was aware that the teachings of Montgomery and Bockhorst et al were not capable of practical implementation, none of the teachings or suggestions provided by the prior art references of record and/or the general knowledge of the skilled person would lead the skilled person to modify the methods and apparatus of Montgomery or Bockhorst et al in the light of Grossman and Close et al or Arriens in such a way as to arrive at the invention of the present claim 1.

The examiner argues that his analysis of the question of obviousness does not rely on improper hindsight reasoning, but it appears that such must be the case. Faced with the problem of transmitting a signal past an obstruction in a downhole tube and given the teaching of Montgomery or Bockhorst et al, the person of *ordinary* skill would see this as providing a complete solution and would have no reason to combine this teaching with the teachings of Grossman and/or Close et al and/or Arriens et al. To say that one skilled in the art would act in the opposite fashion necessarily implies that hindsight has played a factor, even unwittingly, in the examiner's reasoning.

The amendment of claim 1 to recite "wherein a distance between said first and second locations is short in comparison with a distance between said second location and a surface end of the borehole" is implicit in the teaching provided by the present application. It is further submitted that this recitation clarifies the non-obvious and inventive step embodied in the claim. According to the examiner's reading of the prior art, there is no reason for the person of *ordinary* skill to use acoustic transmission over a short path length past an obstruction and then re-convert the acoustic signal to an electrical signal. According to the Applicant's understanding of the prior art, the person of ordinary skill would regard acoustic transmission as a "failed" technology and would not consider it as a providing a potential solution to a long-standing problem. In either case, it is submitted that the subject matter defined by the claim is non-obviousness and provides a proper basis for allowance of the application.

**CONCLUSION**

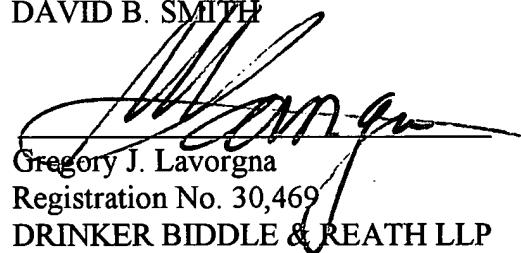
A person of ordinary skill in the art would not be led to make the combination of references proposed by the examiner because, if the examiner's characterization of the references is correct, the primary references would provide a complete solution to the problem solved by the claimed invention. There would, therefore, be no need to combine the primary references with the secondary references, or with any other information.

Based upon the foregoing amendments, the application is believed to be in condition for allowance. Withdrawal of all rejections and objections, and an early notice of allowance of claims 1-6 and 8-13, are earnestly solicited.

Respectfully submitted,

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